AMENDMENTS TO THE CLAIMS

A listing of claims 1-51 follows:

1.-22. (Canceled)

23. (Currently amended) A noise reduction engine, comprising:

a buffer for storing pixel values;

a matrix selector for selecting dimensions of matrices for arranging the pixel values to represent regions of [[an]]prediction error image residue; and

a diffusion engine for applying a reversible diffusion function for reducing the magnitude of at least some of the pixel values and for reducing variability in the difference between adjacent pixel values in a subject matrix by diffusing magnitudes of pixel values into each other, the diffusion engine configured to apply to thereby reduce noise associated with application of a frequency domain transform and application of an inverse frequency domain transform;

an anchor value selector associated with the diffusion engine to select one of the pixel values in a given matrix as an anchor value wherein the anchor value provides for applying a reverse diffusion function to restore the magnitude of the at least some of the pixel values from the at least some of the pixel values after application of the frequency domain transform to the diffused pixel values and application of the inverse frequency domain transform to recover the diffused pixel values.

24. (Canceled) The noise reduction engine as recited in claim 23, further comprising an anchor value selector associated with the diffusion engine to select one of the pixel values in a given matrix as an unchanging diffusion boundary value for a diffusion process to be applied to pixel values in the matrix.

25. (Original) The noise reduction engine as recited in claim 23, further comprising an entropy calculator associated with the anchor value selector to select an anchor value based on an entropy value of one or more of the pixel values.

26. (Previously presented) The noise reduction engine as recited in claim 23, further comprising a scan pattern engine to apply the reversible diffusion function to a matrix of pixel values in an order.

27. (Original) The noise reduction engine as recited in claim 26, further comprising an iteration manager to control an amount of diffusion to be applied to a matrix of pixel values by controlling a number of times that the reversible diffusion function is applied.

28. (Original) The noise reduction engine as recited in claim 23, further comprising a store of reversible diffusion functions suitable for different image residues.

29. (Currently amended) The noise reduction engine as recited in claim 23, further comprising a reverse diffusion module to apply reverse diffusion using [[an]]the anchor value.

30.-51. (Canceled)

52. (New) A method implemented by a computing device for encoding video images, the method comprising:

providing a matrix that comprises pixel values in an undiffused state wherein the pixel values represent prediction error image residue;

selecting one or more of the pixel values as corresponding to one or more anchor values;

applying a reversible diffusion function to at least some of the pixel values in the matrix to generate a matrix that comprises pixel values in a diffused state;

performing a frequency domain transform on the matrix that comprises diffused pixel values; and

transmitting, providing access to or storing the results of the frequency domain transform in conjunction with the one or more anchor values to thereby provide for applying the reversible diffusion function in reverse, after performing an inverse frequency domain transform, to thereby return the pixel values to the undiffused state.

53. (New)   The method of claim 52 further comprising generating the matrix that comprises pixel values in an undiffused state.

54. (New)   The method of claim 52 wherein the selecting selects one or more pixel values as corresponding to one or more anchor values based at least in part on entropy.

55. (New)   The method of claim 54 wherein the selecting selects a low entropy pixel value as an anchor value.

56. (New)   The method of claim 54 wherein the selecting selects a high entropy pixel value as an anchor value.

57. (New)   One or more computer-readable storage media comprising computer-executable instructions to perform the method of claim 52.

58. (New)   A method implemented by a computing device for decoding video images, the method comprising:

providing encoded video image data that correspond at least in part to one or more pixel values in a diffused state of a matrix that represents prediction error image residue;

providing one or more anchor values selected as corresponding to one or more pixel values in an undiffused state of the matrix that represents prediction error image residue;

performing an inverse frequency domain transform on the encoded video image data to provide the one or more pixel values in the diffused state of the matrix; and

applying a reversible diffusion function that relies on the one or more anchor values to thereby return the pixel values to the undiffused state of the matrix.

59. (New)   The method of claim 58 wherein the one or more anchor values comprise one or more anchor values selected based at least in part on entropy.

60. (New)   The method of claim 59 wherein the one or more anchor values comprise one or more anchor values selected based at least in part on a low entropy.

61. (New)   The method of claim 59 wherein the one or more anchor values comprise one or more anchor values selected based at least in part on a high entropy.

62. (New)   One or more computer-readable storage media comprising computer-executable instructions to perform the method of claim 58.